

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (currently amended): A process for impregnating wood or wood based material comprising the steps of:

a. preheating a working solution to a temperature above the atmospheric boiling point (~~“a super hot temperature”~~) of the working solution to form a working solution at a super hot temperature, wherein sufficient pressure is applied throughout the preheating step to ensure the working solution is maintained in a liquid phase;

b. contacting a wood or wood based material with the working solution at [[a]] said super hot temperature and at an elevated pressure such that the working solution is in the liquid phase, to cause impregnation of the liquid ~~base phase~~ solution into the wood or wood based material; and

c. separating the wood or wood based material and any remaining working solution, waste material and/or by-products;
wherein the working solution comprises acetic anhydride.

Claim 2 (canceled)

Claim 3 (currently amended): ~~[[A]]~~The process as claimed in claim 1 ~~or 2~~ including applying an initial pre-pressure to the wood or wood based material prior to contact with the working solution at the super hot temperature, sufficient to maintain the working solution in the liquid phase.

Claim 4 (currently amended): ~~[[A]]~~The process as claimed in claim 3 including applying the pre-pressure by a gas.

Claim 5 (currently amended): ~~[[A]]~~The process as claimed in claim 4 wherein the gas is selected from nitrogen, air, carbon dioxide, argon, acetic acid vapour or acetic anhydride vapour.

Claim 6 (currently amended): ~~[[A]]~~The process as claimed in claim 3 ~~any one of claims 3 to 5~~ including pre-pressurising the working solution to in the range of 10 to 1000 kPa.

Claim 7 (currently amended): ~~[[A]]~~The process as claimed in ~~any one of claims 3 to claim 3~~ [[6]] including pre-pressurising the working solution to in the range of 20 to 700 kPa.

Claim 8 (currently amended): ~~[[A]]~~The process as claimed in claim 1 ~~any one of claims 1 to 7~~ including assisting the impregnation of the solution into the wood or wood based material by applying a further hydraulic or pneumatic pressure (the `working pressure`).

Claim 9 (currently amended): ~~[[A]]~~The process as claimed in claim 8 including applying the working pressure in the range of 20 to 4000 kPa above the initial pre-pressure.

Claim 10 (currently amended): ~~[[A]]~~The process as claimed in claim~~[[s]]~~ 8 ~~or 9~~ including applying the working pressure in the range of 20 to 2000 kPa above the initial pre-pressure.

Claim 11 (currently amended): ~~[[A]]~~The process as claimed in claim 8~~any one of claims 8 to 10~~ including applying the working pressure for less than about 240 minutes.

Claim 12 (currently amended): ~~[[A]]~~ process as claimed in claim 8~~any one of claims 8 to 10~~ including applying the working pressure for less than 120 minutes.

Claim 13 (currently amended): ~~[[A]]~~ The process as claimed in claim 8~~any one of claims 8 to 10~~ including applying the working pressure for between about 1 and about 60 minutes.

Claim 14 (currently amended): ~~[[A]]~~The process as claimed in claim 1~~any one of the preceding claims~~ including subsequent to the impregnation, releasing pressure to separate any remaining working solution, waste material and by-products (the `pressure kickback`).

Claim 15 (currently amended): ~~[[A]]~~The process as claimed in claim 14 including subsequent to separating the wood or wood based material and any remaining working solution, waste material and/or by-products, releasing pressure to separate the pressure kickback.

Claim 16 (currently amended): ~~[[A]]~~The process as claimed in claim 1~~any one of the preceding claims~~ including applying a vacuum to separate any remaining working solution, waste material and/or by-products (the `vacuum kickback`).

Claim 17 (currently amended): ~~[[A]]~~The process as claimed in claim 16 including recycling the pressure kickback, the vacuum kickback or both for reuse as the working solution.

Claim 18 (currently amended): ~~[[A]]~~The process as claimed in claim 17 including adding further of said working solution to the recycled working solution and reusing same.

Claim 19 (currently amended): ~~[[A]]~~The process as claimed in claim 1~~any one of the preceding claims~~ wherein the boiling point of the reaction by-products is lower than the boiling point of the working solution.

Claim 20 (currently amended): ~~[[A]]The process as claimed in claim 1~~~~any one of the preceding claims~~ wherein the wood or wood based material is selected from one or more of solid wood, fibreboard, particle board, wood veneer, wood chips, oriented strand board, laminated veneer board and plywood.

Claim 21 (currently amended): ~~[[A]]The process according to claim 1~~~~any one of the preceding claims~~ including when carried out in a plant comprising:

- a. a first pressure vessel for initially containing and preheating the working solution; and
- b. a second pressure vessel for containing and contacting the wood or wood based material with the working solution.

Claim 22 (currently amended): ~~[[A]]The process as claimed in claim 21~~ wherein said plant also includes a third pressure vessel as a reservoir for unreacted working solution, waste material and/or by-products, said third pressure vessel communicating with said second pressure vessel.

Claim 23 (currently amended): ~~[[A]]The process as claimed in claim 1~~~~any one of the preceding claims~~ including pre-heating the working solution to above about 10° C above the atmospheric pressure boiling point of the working solution.

Claim 24 (currently amended): ~~[[A]]The process as claimed in claim 23~~ including pre-heating the working solution to in the range of 150 to 250° C.

Claim 25 (currently amended): ~~[[A]]The~~ process as claimed in claim 2~~[[4]]3~~ including pre-heating the working solution to in the range of 160 to 220° C.

Claim 26 (currently amended): ~~[[A]]The~~ process as claimed in claim 2~~[[5]]3~~ including pre-heating the working solution to in the range of 170 to 200° C.

Claim 27 (currently amended): ~~[[A]]The A~~ process as claimed in claim 1~~any one of the preceding claims~~ wherein the working solution also comprises~~is selected from any one or more of copper naphthenate, xylene[,], and/or succinic acid and acetic anhydride.~~

Claim 28 (canceled)

Claim 29 (currently amended): ~~[[A]]The~~ process as claimed in claim 1~~any one of the preceding claims~~ including combining the working solution with a solvent.

Claim 30 (currently amended): ~~[[A]]The~~ process as claimed in claim 29 wherein the solvent is selected from any one or more of water, isopropanol, methylene chloride, xylene[,], and xylene mixed with paraffin wax,~~and acetic anhydride.~~

Claim 31 (currently amended): A process for impregnating wood or wood based material comprising the steps of:

a. preheating a working solution to a temperature above the atmospheric boiling point ("~~a super hot temperature~~") of the working solution to form a working solution at a super hot temperature, at an elevated pressure sufficient to maintain the working solution in the liquid phase;

b. applying a ~~pre-pressure~~pre-pressure to a wood or wood based material prior to contact with the working solution at the super hot temperature, sufficient to maintain the working solution in the liquid phase;

c. contacting a wood or wood based material with the working solution at a said super hot temperature and a said elevated pressure to cause impregnation of the solution into the wood or wood based material;

d. applying further pressure (the `working pressure`) to assist the impregnation of the working solution into the wood or wood based material; ~~and~~

e. separating the wood or wood based material and any remaining working solution, waste material and/or by-products[.]; and

f. reducing the pressure to remove any further working solution, waste material and/or by-products;

wherein the working solution comprises acetic anhydride.

Claim 32 (currently amended): A process for impregnating wood or wood based material comprising the steps of

a. preheating a working solution to a temperature above the atmospheric boiling point ("~~a super hot temperature~~") of the working solution to form a working solution at a super hot temperature, at an elevated pressure sufficient to maintain the working solution in the liquid phase;

b. contacting a wood or wood based material with the working solution at [[a]] said super hot temperature and a said elevated pressure to cause impregnation of the solution into the wood or wood based material;

c. separating the wood or wood based material and any remaining working solution, waste material and/or by-products; and

d. recycling any separated working solution, waste material and/or by-products as the working solution;
wherein the working solution comprises acetic anhydride.

Claim 33 (currently amended): An impregnated wood or wood based material produced according to [[a]] the process of claim 1 ~~any one of the preceding claims.~~